Observing Application

Date :	Sep, 08 2012
Proposal ID :	VLA/12B-376
Legacy ID :	AB1465
PI :	Edo Berger
Type :	Director's Discretionary Time - Target of Opportunity
Category :	Energetic Transients and Pulsars
Total Time :	1.0

The ULIRG Host Galaxies of Short GRBs

Abstract:

We request one hour of EVLA C band observations to observe the host of short GRB 100206A. Recent EVLA follow-up of short GRB 120804A over the course of 11 days revealed a steady source at 5.8 GHz with an optically thin spectral index, unlike the SED from a standard GRB radio afterglow. The host galaxy can be fit with the spectral energy distribution of the ULIRG Arp 220 at z ~1.1, implying an inferred star formation rate of hundreds of solar masses per year. Of the 25 short GRBs with host galaxies, only GRB 100206A has similar properties to GRB 120804A. Its inferred star formation rate results in a 5 GHz flux density prediction of 0.5 mJy. We are nearing completion of a paper summarizing the afterglow and host galaxy properties of GRB 120804A, and the observation and detection requested here will be incorporated for rapid publication.

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Related proposals:

12A-394

Joint:

Not a Joint Proposal

Observing type(s):

Continuum

VLA Resources

Name	Conf.	Frontend & Backend	Setup

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Cwide	Any	C Band 6 cm 4000-8000 MHz WIDAR OSRO, Full Polarization	Rest frequencies: 4900.0,6700.0 MHz Subband Bandwidth: 128.0 MHz No. of Channels: 64 Poln. products: 4.0 Channel Width: 2000.0 kHz Total Bandwidth: 2,048.00 MHz

Testing Resource Images

Sources:

Name	Position		Velocity		Group
GRB100206A	**Coordinate System**	Equatorial	**Convention**	Radio	shortGRB_Host
	Equinox	J2000			
	Right Ascension	03:08:38.81	**Ref. Frame**	LSRK	
		00:00:00.0			
	Declination	+13:09:28.4	**Velocity**	0.00	
		00:00:00.0			

Sessions:

Name	Session Time (hours)	Repeat	Separation	LST minimum	LST maximum	Elevation Minimum
Cband	1.00	1	0 day	22:00:00	07:00:00	20

Session Constraints:

Name	Constraints	Comments
Cband		7 uJy/bm RMS assumes 1.7 GHz of usable bandwidth after RMS flagging, and ~35 min integration on source in an hour SB.

Session Source/Resource Pairs:

Session Name	Source	Resource	Time	Figure of Merit	Subarray
Cband	GRB100206A	Cwide	1.0 hour	0.007 mJy/bm	

Present for observation: yes Staff support: None Plan of Dissertation: no